SITE: MONARCH TILE MANUFACTURING. INC. (AKA RICKWOOD ROAD/HELTON DRIVE PROPOSED NPL SITE

ON-SCENE COORDINATOR: TIM WOOLHEATER

OFFICIAL LISTED REMOVAL COMPLETION DATE: 09/30/97

REVIEW RESULTS: REMOVAL ACTION FINAL REPORT, REVISION 02, MARCH 1998 - INDICATES THAT BACKFILLING WAS COMPLETED ON MAY 16 AND 17, 1997.

CONCLUSIONS: REMOVAL FINAL ACTION REPORT INDICATES THAT REMOVAL ACTION MAY HAVE CONCLUDED ON MAY 17, 1997.

ATTACHMENTS: REMOVAL ACTION FINAL REPORT, REVISION 02, MARCH 1998.

RICKWOOD ROAD/HELTON DRIVE PROPOSED NPL SITE

Florence, Alabama

Removal Action Final Report

Revision 02

ENSR Consulting and Engineering

March 1998

Document Number 4709008.R05

Executive Summary

Monarch Tile, Inc. entered into an Agreement on Consent with the U.S. Environmental Protection Agency (EPA), Region IV, to conduct a Non-time Critical Removal Action at its Florence, Alabama facility. In August of 1996, Monarch/ENSR submitted a Removal Action Work Plan (RAP) detailing the activities to be conducted for implementation of the final removal action. In accordance with the approved RAP, the final removal action was executed during the months of October and November of 1996. ADEM provided field oversight for the removal action, working with ENSR and EPA to ensure that removal activities complied with the RAP and subsequent addendums. This document serves as the final report summarizing activities conducted as part of the removal action.

Background

As part of the removal action, ENSR (on behalf of Monarch) conducted an Engineering Evaluation and Cost Analysis (EE/CA) for the Site to evaluate several removal action alternatives and select the optimum alternative based on effectiveness, implementability, and cost. In an Action Memorandum (AM) dated August 23, 1996, EPA selected the alternative recommended by ENSR, which was in-situ solidification/stabilization of impacted sludge in the wastewater basins (combining excavated soil and sediments from the areas of concern), followed by off-site disposal in a Subtitle D Landfill. The AM also mandated implementation of institutional controls as part of the removal action to prevent future use of the property for residential purposes. However, after implementation of the removal action, an evaluation of risk posed by surface and subsurface soil concentrations led EPA to reconsider the requirement for additional institutional controls. In September 1997, EPA issued an Explanation of Significant Difference (ESD) for Cleanup Requirements removing the mandate for institutional controls.

Target Clean-up Levels and Areas of Concern

Based on evaluation of the risks, EPA established the following performance standards for the various media (6):

- 1,300 ppm (total lead) in the onsite soils and the drainage ditch areas, and
- 6,400 ppm (total lead) for those soils two feet below the surface in the area of the onsite wastewater basins, both open and closed

EPA established the 6,400 ppm performance standard for subsurface soils in the wastewater basins area based on the future paved use of the area. During removal action activities, EPA approved a plan for backfilling the basin area with clay compacted to meet 90% Standard Proctor in lieu of paving.

Based on the Site Characterization, and in accordance with the performance standards established by EPA, the following AOCs were identified:

- Approximately 2,100 cubic yards of wastewater sludge (lime based) in the closed and active wastewater basins.
- Approximately 5 cubic yards of soil from an on-site surface soil grid west of the South Plant building.
- Approximately 5 cubic yards of soil from an on-site surface soil grid near the wastewater treatment plant at the South Plant. This area was addressed in an interim limited removal action (March 1996); the excavated soil was stockpiled on-site and disposed of as part of the final removal action.
- Approximately 75 cubic yards of soil from the historic ditch location on the South Plant and Joiner Trucking property. The portion of the ditch located on-site was addressed in the aforementioned interim limited removal action, and excavated soil was stockpiled on-site and disposed of as part of the final removal action.
- Approximately 50 cubic yards of soil and sediments from the sidewalls and floodplain of the North Ditch located in one stretch approximately 400 feet (Transects 3 to 7, on-site and off-site).
- Approximately 5 cubic yards of soil from an on-site surface soil grid north of the North Plant building.
- Approximately 50 cubic yards from a paleochannel located on the southern end of the Elks Lodge property.

Performance Standards

The following Table 1 summarizes the performance standards for the removal action.

TABLE 1

Performance Standards for the Removal Action

Action	Performance Standard
Stabilization/Solidification of Material	Stabilized/solidified material and stockpiled impacted soil were analyzed for TCLP lead to ensure that disposal would comply with land disposal restrictions (LDRs).
Off-site disposal	Prior to off-site disposal, treated material was analyzed to ensure that it met the Paint Filter Test for free liquids. Samples were collected from impacted soil/sediment excavated from AOCs and stockpiled above-ground in CAMU 1 and analyzed for TCLP lead to ensure that disposal would comply with LDRs (without treatment).[1]

TABLE 1 (Cont'd)

Performance Standards for the Removal Action

Confirmation Sampling	Samples were collected from excavation floors and sidewalls in the surface soil grids and in the ditches/channels and analyzed for total Pb to ensure excavations met the clean-up criterion of 1,300 ppm established for the Site. Samples were collected from excavation floors and sidewalls of the wastewater basins (both open and closed) to ensure the excavated areas met the clean-up criterion of 6,400 ppm.
Backfilling Compaction (Basins)	For areas in the basins which exceeded 1,300 ppm (but were less than 6,400 ppm), as the basins were backfilled, a shelby tube sample was obtained and analyzed for permeability to ensure that the material met, at a minimum, the criterion for landfill caps in the state of Alabama, 10^{-5} cm/sec; backfilling with compacted clay was approved by EPA/ADEM in lieu of paving.[2]
1 - In accordance with the October 2, 1996 Addendum to the RAP. 2 - In accordance with the October 31, 1996 Addendum to the RAP.	

Construction Activities

All excavation, transporting, and construction activities pertaining to impacted material were conducted by GNB, subcontracted and supervised by ENSR. Transporting of clean fill and backfilling was conducted by S & M, also subcontracted and supervised by ENSR. ADEM provided direct oversight of all activities pertaining to impacted material. Impacted material which was disposed of was loaded into trucks for transportation to the Cullman Landfill by Terra First and S & M.

Corrective action management units (CAMUs) were implemented to encompass the AOCs while the material to be treated or disposed was accessed and excavated. A staging area was utilized in CAMU #1; impacted soil and sediments excavated from the other CAMUs were transported to this area and stockpiled for disposal or treatment pending analytical (characterization) results. Upon completion of excavation activities within each CAMU, confirmation sampling was conducted to confirm clean closure, and the areas were restored.

Treatment of Impacted Material

An approximate total of 2,015 cubic yards of impacted soil and sediment excavated from the AOCs were transported to the staging area in CAMU 1 and stockpiled on the closed basin and in and adjacent to Basins 1 and 2. Approximately 500 cubic yards of impacted soil met land disposal requirements without treatment, and was therefore loaded and transported for disposal. ENSR stabilized approximately 7,148 tons of sludge and soil using 592 tons of LKD. During stabilization activities, ENSR loaded and transported stockpiled treated material that met the

performance standard. Upon completion of all stabilization activities, ENSR had disposed of approximately 7,740 tons of treated sludge/soil at the Cullman Landfill.

Final Inspection

A site inspection was conducted by EPA and ADEM with ENSR on November 7, 1996. All impacted material associated with the removal action had been excavated and transported to the landfill at the time of the inspection. All CAMUs were closed in accordance with the RAP, and with the exception of the wastewater basins, the AOCs were backfilled and revegetated in accordance with the RAP. Basin 3 was backfilled, and the closed basin was partially backfilled. However, due to weather constraints (excessive moisture), backfilling of Basins 1, 2, and the remainder of the closed basin was not completed at the time of the inspection. Based on the inspection, EPA/ADEM identified institutional controls, permeability tests, and final grading as bullet items to complete the removal action.

Once weather permitted backfilling that achieved permeability specifications, the remainder of the excavated basin area was backfilled. Final backfilling was completed on May 16 and 17, 1997. Upon evaluating the risk to human health posed by the site after completion of the removal activities, EPA issued the ESD removing the requirement for additional institutional controls.